Project Management Software – Review and Recommendations
For Environmental Results Program (ERP) Implementation

I.   Introduction: Project Management and ERP

Development and implementation of an Environmental Results Program (ERP) initiative, either on a citywide- or statewide-scale, is a complex undertaking requiring vigilant and tight project management. ERP implementation generally requires the coordination of numerous people across a host of agencies, divisions, businesses, and community groups. This demands managing both internal and external partners that are providing support in a variety of different disciplines, including legislation, regulation, statistics, economics, law, information technology, science, and policy development. All these players are going to be competing for limited time and resources. In working with such a multitude of players, identifying and avoiding scheduling dependencies and potential bottlenecks is critical. It is the role of an ERP team leader to not only keep his or her eye on the big picture, but also to make sure every task is carried out in a timely and accurate fashion. Project management software is well suited to help a manager achieve these results.

This document is intended to provide ERP managers with a basic understanding of how project management software can assist in ERP implementation, and what to consider in choosing a project management software solution.

II.   What Is Project Management and Why Use Project Management Software?

Project management (PM) simply means handling all the components of a given project: identifying tasks, assigning people to interrelated tasks, obtaining and parceling out necessary materials, meeting deadlines (or having fall-back plans when deadlines are not met), and keeping an eye on the budget.[1]

Project management software makes it easier to manage schedules and resources, communicate project status, and report project information. A good computer-based project management package helps you quickly determine whether your plans are feasible, spot potential pitfalls, and track your project to completion. Project management methodology existed long before personal computers, but modern computers make it easier to wrap your head around some of the more complex concepts.[2]

One of the most challenging aspects of executing a complex project is the planning and tracking of all its different stages. All the elements of the project need to broken down into sub-projects that run in parallel but are ready to rejoin the main project at a certain time. These types of challenges are just the type of problem project management software was designed to tackle.

Software helps project managers tackle four main issues[3]:

- Planning, including task sequencing and timing
- Resource Management, including people, equipment, and materials availability
- Progress Tracking, including analysis of project status
- Progress Reporting, both internally to the project team, and externally to management or the customer

Before work begins, software helps to:

- Create a well thought out plan and project schedule through assembling project in the right sequence
- Find more creative solutions
- Forecast potential problems

After work has started, software helps to:

- Work more effectively as a team by sharing information
- Anticipate difficulties and conflicts, and easily modify plans as needed
- Identify and resolve resource allocation issues
- Make better decisions that affect the outcome of the project
- Determine the effects of making changes to the schedule, allowing you to be proactive, and not just reactive

III. Types of Project Management Software

Software to manage projects range from small, single user applications that allow a user to identify and track several unrelated tasks, such as the "Tasks" function embedded in Microsoft Outlook, to very specialized applications for specific trades that call for managing thousands of people, tasks, schedules, resources for multiple complex projects that cost thousands of dollars. It is important to choose a program that is appropriate for the size, scope, complexity, and management demands of your project.

The software category addressed in this report focuses on project management software that is targeted to users who are relatively new to project management, and may be using PM software for the first time. Software in this category ranges from simple project planning applications for small projects or tasks, to full-fledged planning, management, and tracking software packages for very large and multiple projects.

Software programs that are designed for large, complex projects generally are more complicated and challenging to use than software designed for smaller projects. It is therefore important to choose a program that is appropriate for your intended project.

This report divides this novice-friendly software segment into two categories of software: basic and advanced. A small project might be a Web site redesign or the development of a community recycling initiative. When the time line you're considering is short (six months or fewer) and the number of people and other resources involved is small (a couple dozen or fewer), then maybe a simple schedule of the project is all you need to identify bottlenecks. For these small projects, you can plan tasks with basic project management software. Graphs will help you sort out which tasks are most critical or likely to cause trouble.[4]

Larger projects, such as launching a new, comprehensive statewide ERP program, will likely require more complex tools. If your project is a year-long affair and requires coordinating scores of people or hundreds of materials, you need software that not only creates a schedule but lets you track daily progress. In addition, you probably also need to assign workers to tasks, budget and monitor disbursement of funds, and report back to management. For this sort of undertaking, you'll need a full-fledged advanced project management solution.

Some of the functions of both basic and advanced project management tools are outlined in the following section.

IV.   What Can Project Management Software Do For Me?

a. *Basic Software Applications Can Help:*
     i.   Brainstorm goals and objectives
    ii.   Identify tasks
   iii.   Assign people to tasks
   iv.   Develop timelines for project milestones, such as Gantt charts
    v.   Create and output basic progress and status reports and presentations, including graphs, charts, reports, summaries, etc.

b. *Advanced Software Applications Can Help:*
     i.   All of the above functions, plus:
    ii.   Identify dependencies, such as tasks that have to happen before another task can be accomplished
   iii.   Attach costs and expenses to tasks, and track costs over time
   iv.   Track resources, such as people, equipment, and other materials required
    v.   Anticipate scheduling issues and conflicts by tracking resources through multiple specialized calendars
   vi.   Identify over- and under-allocation of resources to project tasks
   vii.   "Level" resources--that is, rearrange the project schedule to even out resource demands
  viii.   Advanced reporting functions, such as earned value of your budget, and your resource usage to activity lists summarized by responsibility or resource costs
   ix.   Develop project document templates to create unified project look and approach

    x. Create multiple summary project "baselines" to consult daily; baselines tracks project schedule, resource allocations and budget considerations.

    xi. Create multiple "interim plans" to account for major project changes, while maintaining a complete baseline of original schedule.

    xii. Employ sophisticated "groupware/collaboration" functionality to manage contacts with project team members and other people. This might include integrated e-mail communications, timesheet management, expense reporting, project status reporting, calls for missing information, etc.

    xiii. Enable Web-based project management tools to facilitate team access

    xiv. Manage to a limited degree, project coordination AMONG multiple large projects.

V. Software Solution Options

Based on a web-resource review of off-the-shelf project management software products geared to project management novices, a few products surface that might be appropriate for an Environmental Results Program project initiative. The software programs outlined below were chosen to provide a range of software for both small and large projects and are:

- readily available
- widely used
- designed to be adopted by first-time users not necessarily familiar with project management software
- geared to non-highly specialized projects (specialized projects include construction, engineering, telecommunications, etc.), and
- are priced to accommodate lower-budget enterprises

Recommendations are broken into two categories: basic and advanced software. The recommendations include:

    a. Basic Project Management Software:

        i. **Project KickStart 3.2** from Experience in Software
- www.projectkickstart.com/html/pkswin3.htm
- Trial version: www.projectkickstart.com/html/downdemo3.cfm

        ii. **FastTrack Schedule 8** from AEC Software
- www.aecsoft.com/products/desktop/fasttrack/
- Trial version: www.aecsoft.com/downloads/demo/

b. Advanced Project Management Software:

   i. **SureTrack 3.0** (with Project Kickstart) from Primavera
      - www.primavera.com/products/sure.html
      - Trial version: www.primavera.com/products/sure_download.html

   ii. **Project Standard 2002/3** from Microsoft
      - www.microsoft.com/office/project/default.asp
      - Trial version:
        www.microsoft.com/office/project/evaluation/trial.asp

All four software programs are available as a free or nominally priced trial edition to allow potential buyers the opportunity to try them before purchasing. It is recommended that users try programs under consideration to see what features and user-interfaces are most appropriate for the user and the project to be managed. As of September 2003, the trial versions could be found through the links above.

VI. Considerations for Software Selection by State Agencies Implementing Environmental Results Program Projects

ERP programs and projects are well suited for adopting a project management software tool. Generally, ERP projects have characteristics that make any of the four software recommendations appropriate choices. As outlined earlier, ERP projects can run the gamut from small initiatives to complex undertakings. Compared to large infrastructure construction projects, ERP projects are not too resource intensive, have a manageable number of tasks and subtasks, and do not typically have excessively complex scheduling requirements. The primary drivers for choosing software packages boil down to:

1. Level of Project Management Desired
2. Technological Comfort Level of Software Users

If a project manager is seeking to apply and leverage advanced and complete project management tools, and has significant interest and need for resource management, the choices include only the two advanced packages, SureTrack 3.0 from Primavera, and Microsoft Project Standard 2002 or 2003. They are both up to the task, and will not be "out grown" as projects become more complex, or project managers become more adept at utilizing the programs.

Microsoft Project 2002/3 has certain built-in advantages for selection, in that most computer users are probably already using Microsoft Office programs and are familiar with their use. Furthermore, many other state ERP implementers are currently utilizing Microsoft Project, and may be able to lend assistance in learning how to use the program. There certainly are advantages of integrating Project 2002/3 with other Office tools, such as tighter integration with and smoother transitions between Microsoft Project and other Microsoft

programs. For example, you can import task lists created in Microsoft Excel and Microsoft Outlook directly into Microsoft Project. However, those advantages are not paramount. **SureTrack** has much the same functionality as Project 2002/3, is generally considered easier to use, and as a bonus, has integrated Project KickStart into the program's front end. This gives users the additional functionality to carry out better initial project brainstorming and design not offered in Project 2002/3.

However, **Project KickStart 3.2** may be all a manager would need if a project manager of an ERP initiative is only seeking to get assistance in laying out the framework and design of a project, while brainstorming tasks, subtasks, and some basic scheduling. Project KickStart offers essentially a digital Gantt chart from which to analyze project status. Alternately, **FastTrack Schedule 8** would be a logical choice if, in addition to those functions, the manager wanted to manage and track costs and other resources to just a basic level of detail. If users of either KickStart or FastTrack later determine they need additional management power, both programs can export their data into more advanced programs, such as SureTrack and Project.

After determining the level of management desired, it is critical that the software purchaser take into consideration the willingness and ability of other users to adopt the new technology if additional team members are expected to use the program. If a program is chosen that is perceived as too complicated or unwieldy by potential users, a real opportunity to improve project management might be lost. The technology and program chosen must fit in well with the expertise and culture of the organization - or it will run the risk of being underutilized.

A comparison chart outlining the key characteristics of the four recommended software packages follows.

	Project KickStart 3.2	FastTrack Schedule 8	SureTrack 3.0	Microsoft Project Standard 2002/3
SOFTWARE TYPE	Basic	Basic	Advanced	Advanced
PLATFORM	Windows Only	Windows & Mac	Windows Only	Windows Only
PRICE (single copy, suggested retail)	$129.95	$299.00	$499	$599
CORE FEATURES & FUNCTIONALITY				
Emphasis On Project Brainstorming And Design	Yes	No	Yes	No
Ease Of Use	Highest	High	Lower	Lowest
Assist In Goal Setting	Yes	No	Yes	No
Simple Gantt Charting	Yes	Yes	Yes	Yes
Advanced Charting	No	Yes	Yes	Yes
Can Create Dependencies	No	Yes	Yes	Yes
Advanced Reporting Output	No	Yes	Yes	Yes
Can Perform Numeric Calculations	No	Yes	Yes	Yes
Filtering Capability	No	Yes	Yes	Yes
Sophisticated Progress Tracking	No	Yes	Yes	Yes
Complex Scheduling Capabilities	No	No	Yes	Yes
Resource Tracking	No	Yes	Yes	Yes
Can Identify Critical Paths And Potential Project Bottlenecks	No	Yes	Yes	Yes
Advanced Groupware Communication Functions	No	No	Yes	Yes
Can Conduct Resource Leveling	No	No	Yes	Yes
Designed For Enterprise-Wide Application And Planning	No	No	No	Yes

	Project KickStart 3.2	FastTrack Schedule 8	SureTrack 3.0	Microsoft Project Standard 2002/3
STRENGTHS	• Simplicity of use • Designed for novice user without project management experience • Assists with early stage project design and planning • Good for clarifying ideas, and getting project "off the ground" • Can be used in conjunction with more powerful project management software • Good for introduction to project management • Pre-defined lists make data entry simple	• Simplicity of use • Strong graphical representation of project status • Simplified dependency setup • Ability to easily show a project in simple graphics, while focusing on the "big picture" • Can perform limited resource management and tracking • Calendar function displays all tasks moving in parallel • Can export data to Microsoft Project or other more advanced solutions	• Full featured, advanced functions for complex project management • Integrated Project Kickstart program for better project planning • Strong resource management capability including "resource leveling" • Built-in e-mail capabilities for team information sharing	• Powerful and sophisticated for complex projects • Additional wizards assist project set-up and management • Closely integrates with MS Office suite • Can be integrated into enterprise resource planning (ERP) systems • Can manage a portfolio of projects • Can scale-up use from single user to whole enterprise-use • Numerous networked functions available
DRAWBACKS	• Not intended for complex planning and tracking of project progress • Can't create dependencies • Weak report generator • Limited to 1000 tasks, and 100 people	• Resource management tracking function is limited and basic; limited to tracking resource on only one project • Additional features detract from original program's ease of use	• Best for small to medium projects	• More complicated to set-up and use • Can be "budget buster" for very low budget projects • Limited capability for true multi-project coordination

Endnotes

[1] PCWorld.com. *Project Management for Modern Managers*, September 09, 1999

[2] PCWorld.com, September 09, 1999

[3] Adapted from R. Max Wideman's Issacons© (Issues and Considerations) Number 1316, http://www.maxwideman.com/
[4] Adapted from PCWorld.com, September 09, 1999